REMARKS

The Applicants thank the Examiner for the thorough consideration given the present application. Claims 1, 4, 6-8, 11, 13-15, 17-20, and 22-24 are currently being prosecuted. Claims 1, 6, 8, 15, 18, and 20 have been amended. Claims 1, 8, 15, and 20 are independent. The Examiner is respectfully requested to reconsider his rejections in view of the amendments and remarks as set forth herein.

Drawings

The Examiner has objected to the drawings because the reference numeral 2 is used to designate both the metal carrier (page 3, line 9) and the line 2 (page 4, line 22). In response the Applicants have amended Fig. 3 to delete reference numeral 2, and have submitted a revised FIG. 3 in a separate letter to the Official Draftsperson. It is respectfully submitted that the drawings now comply with the requirements of the USPTO.

Rejection Under 35 U.S.C. §112, first paragraph and second paragraph

Claims 1, 4, 6-8, 11, 13-15, 17-20, and 22-24 stand rejected under 35 U.S.C. §112, first paragraph, as not being sufficiently described in the specification. Claims 1, 4, 6-8, 11, 13-15, 17-20, and 22-24 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. These rejections are respectfully traversed.

In response, the Applicants have amended claims 1, 8, 15, and 20 to delete the phrase "the case and the honeycomb structure have a reduced linear expansion during warm up and use", and to include the phrase "and since the material of the case is the same as that of the

honeycomb structure, a difference in the coefficient of linear expansion between the case and the honeycomb structure is small, thereby suppressing thermal deformation of the case".

Claims 6 and 18 have been amended to read "wherein the catalyst layer is a noble metal formed on the honeycomb structure".

Claims 8 and 20 have been amended to provide proper antecedent basis for the catalyst layer in line 13 of each claim.

Claims 13 and 23 now properly depend from claims 8 and 20, respectively.

In view of the above amendments, the rejections under 35 U.S.C. §112, first and second paragraphs, have been obviated.

Rejection Under 35 U.S.C. §103(a)

Claims 1, 4, 6-8, 11, 13-15, 17-20, and 22-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Whittenberger et al (U.S. 5.651,906) in view of Kohno et al. (U.S. 5,653,825), Arai et al. (U.S. 5,151,254), and Gulati (U.S. 5,376,341). This rejection is respectfully traversed.

In response, the Applicants have amended claims 1, 8, 15, and 20 herein, to include a combination of elements including a honeycomb structure and a case both made of ferritic stainless steel, a muffler housing for housing said case, and a catalyst layer formed on exposed surfaces of said honeycomb structure and on an interior surface of said case, and since the material of the case is the same as that of the honeycomb structure, a difference in

the coefficient of linear expansion between the case and the honeycomb structure is small, thereby suppressing thermal deformation of the case.

Claims 1 and 8 of the present invention further comprise a case having Mo content in the ferritic stainless steel in the range of 0.30 wt% $\leqq$ Mo $\leqq$ 2.50 wt%.

A review of Whittenberger shows that Whittenberger fails to disclose either a case made of ferritic stainless steel containing Mo, or a muffler housing, with a case disposed within.

The Kohno et al. patent merely discloses stainless steel sheets having an Mo content of not more than 2.0%, and fails to teach a muffler housing, with a case disposed within. Moreover, in neither of these patents is there any teaching or suggestion of using the same material for both a honeycomb structure and a case, so that the difference in linear expansion between the case and the honeycomb structure is small.

Column 7, lines 2-6 of the Kohno et al. patent states that "Mo is effective for further improving the corrosion resistance of a given stainless steel. Content of Mo above 2.0% by weight invite reduced hot rolling workability. Thus Mo should be in a content of not more than 2.0% by weight in the steel."

Given the fact that Kohno et al. specifically teach against having an Mo content above 2.0%, the Applicants find it difficult to understand how the Examiner would conclude it would be obvious to a person in the art would take the teachings of Kohno et al. to make an invention calling for Mo in the range of 0.30wt% $\leqq$ Mo $\leqq$ 2.50wt%. The Applicants also

respectfully point out to the Examiner that corrosion resistance (the object of Kohno et al.) is different from high temperature resistance (the object of the present inventors). It should be noted that resistance against corrosion is resistance against rust, rust being a chemical reaction with water, with the swapping of ions. By contrast, resistance against high temperature oxidation is resistance against a reaction with gas (usually oxygen). Kohno et al. teach that Mo has a definite effect in resisting corrosion in stainless steel, but does not teach what the effect may be in resisting the effects of high temperature oxidation as in the present invention. Thus, while Mo of less than 2.0% as taught by Kohno et al. affords resistance against corrosion, it is not proper to conclude that Mo of less than 2.0% would also achieve the resistance against high temperature oxidation, an object of the present invention (page 2, lines 16-18, of the specification provides supporting disclosure).

Regarding the Arai (U.S. 5,151,254) and Gulati (U.S.5,376341) patents, in neither of these is there any teaching of Mo in the range of $0.30\% \leqq \text{Mo} \leqq 2.5\%$, as claimed in independent claim 1 and 8 of the present invention.

Further, there is no teaching or suggestion in any of the prior art references of using the same material for both the case and the honeycomb structure, in order that the difference in linear expansion between the case and the honeycomb structure be small, as claimed in independent claims 1, 8, 15, and 20 of the present invention.

Thus, the Applicants respectfully submit that the prior art references cited by the Examiner, either alone or in combination, fail to teach or suggest the novel combination of

elements of the present invention. Accordingly, the Examiner's rejection under 35 U.S.C. §103(a) has been obviated.

Independent claims 1, 8, 15, and 20, as well as the claims depending therefrom, are now in condition for allowance.

CONCLUSION

In view of the above amendments and remarks, reconsideration of the rejections and allowance of all of the claims are respectfully requested.

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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By _____
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505-477P
Attachment
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MARKED-UP COPY OF AMENDED CLAIMS

IN THE SPECIFICATION:

Please **rewrite the paragraph beginning on page 6, line 1**, as follows:

From Table 2, it can be understood that the case 6 of the cleaner 1 of Example 1 had an excellent high temperature oxidation resistance [end] and good deformation resistance. Thus, the excellent gas cleaning ability of Example 1 is maintained for a long time.

IN THE DRAWINGS:

Attached is a **proposed drawing correction to FIG. 2**. Upon approval, the proposed correction will be entered into the formal drawings.

IN THE CLAIMS:

Please **amend claims 1, 6, 8, 15, 18, and 20 being rewritten** as follows:

1. (Three Times Amended) A metal carrier for a catalyst comprising:

a honeycomb structure made of ferritic stainless steel and shaped in a cylindrical form, said honeycomb structure having a plurality of air vents extending in an axial direction thereof;

a cylindrical case covering an outer peripheral surface of the honeycomb structure, wherein the cylindrical case is composed of ferritic stainless steel containing Mo, said Mo content in the ferritic stainless steel is in the range of 0.30 wt% $\leqq$ Mo $\leqq$ 2.50 wt%;

a muffler housing, said cylindrical case being disposed within said muffler housing and being displaced a predetermined distance relative to an interior wall of the muffler housing to form a space therebetween;

an exhaust pipe extending within said muffler housing and being displaced relative to the interior wall of the muffler housing to form a space therebetween, said cylindrical case being mounted on said exhaust pipe at a distal end thereof; and

a catalyst layer being formed on exposed surfaces of said honeycomb structure and on an interior surface of said cylindrical case, [said cylindrical case and said honeycomb structure having a reduced linear expansion during warm up and use] and since the material of the case is the same as that of the honeycomb structure, a difference in the coefficient of linear expansion between the case and the honeycomb structure is small, thereby suppressing thermal deformation of the case.

6. (Amended) The metal carrier for a catalyst according to claim **1**, [and further including a] wherein the catalyst layer [of] is a noble metal formed on the honeycomb structure.

8. (Three Times Amended) A metal carrier for a catalyst comprising:

a honeycomb structure made of ferritic stainless steel and having a catalyst layer formed thereon, said honeycomb structure having a plurality of air vents extending in a flow direction through the honeycomb structure;

a case covering an outer surface of the honeycomb structure, wherein the case is composed of ferritic stainless steel containing Mo, said Mo content in the ferritic stainless steel is in the range of 0.30 wt% ≦ Mo ≦ 2.50 wt%;

a muffler housing, said case being disposed within said muffler housing and being displaced a predetermined distance relative to an interior wall of the muffler housing to form a space therebetween; and

an exhaust pipe extending within said muffler housing and being displaced relative to the interior wall of the muffler housing to form a space therebetween, said case being mounted on said exhaust pipe at a distal end thereof[; and

a], wherein said catalyst layer [being] is formed on exposed surfaces of said honeycomb structure and on an interior surface of said case, [said case and said honeycomb structure having a reduced linear expansion during warm up and use] and since the material of the case is the same as that of the honeycomb structure, a difference in the coefficient of linear expansion between the case and the honeycomb structure is small, thereby suppressing thermal deformation of the case.

15. (Twice Amended) A metal carrier for a catalyst comprising:

a honeycomb structure made of ferritic stainless steel, said honeycomb structure having a plurality of air vents extending in an axial direction thereof;

a case covering an outer peripheral surface of the honeycomb structure, wherein the case is composed of ferritic stainless steel containing Mo, said Mo content in the ferritic stainless steel is 1.2 wt%;

a muffler housing, said case being disposed within said muffler housing and being displaced a predetermined distance relative to an interior wall of the muffler housing to form a space therebetween;

an exhaust pipe extending within said muffler housing and being displaced relative to the interior wall of the muffler housing to form a space therebetween, said case being mounted on said exhaust pipe at a distal end thereof; and

a catalyst layer being formed on exposed surfaces of said honeycomb structure and on an interior surface of said case, [said case and said honeycomb structure having a reduced linear expansion during warm up and use] and since the material of the case is the same as that of the honeycomb structure, a difference in the coefficient of linear expansion between the case and the honeycomb structure is small, thereby suppressing thermal deformation of the case.

18. (Amended) The metal carrier for a catalyst according to claim **15**, [and further including a] wherein the catalyst layer [of] is a noble metal formed on the honeycomb structure.

20. (Twice Amended) A metal carrier for a catalyst comprising:

a honeycomb structure made of ferritic stainless steel and having a catalyst layer formed thereon, said honeycomb structure having a plurality of air vents extending in a flow direction through the honeycomb structure;

a case covering an outer surface of the honeycomb structure, wherein the case is composed of ferritic stainless steel containing Mo, said Mo content in the ferritic stainless steel is 1.20wt%;

a muffler housing, said case being disposed within said muffler housing and being displaced a predetermined distance relative to an interior wall of the muffler housing to form a space therebetween; and

an exhaust pipe extending within said muffler housing and being displaced relative to the interior wall of the muffler housing to form a space therebetween, said case being mounted on said exhaust pipe at a distal end thereof]; and

a],wherein said catalyst layer [being] is formed on exposed surfaces of said honeycomb structure and on an interior surface of said case, [said case and said honeycomb structure having a reduced linear expansion during warm up and use] and since the material of the case is the same as that of the honeycomb structure, a difference in the coefficient of linear expansion between the case and the honeycomb structure is small, thereby suppressing thermal deformation of the case.